

COPY

RECEIVED

What is claimed is:

MAY 12 2003
TECH CENTER 1600/2900

1. A purified polypeptide comprising an amino acid sequence selected from the group consisting of:

- 5 a) an amino acid sequence of SEQ ID NO:1,
- b) a naturally-occurring amino acid sequence having at least 90% sequence identity to the sequence of SEQ ID NO:1,
- c) a biologically-active fragment of the amino acid sequence of SEQ ID NO:1, and
- 10 d) an immunogenic fragment of the amino acid sequence of SEQ ID NO:1.

2. An isolated polynucleotide encoding a polypeptide of claim 1.

3. A recombinant polynucleotide comprising a promoter sequence operably
15 linked to a polynucleotide of claim 2.

4. A cell transformed with a recombinant polynucleotide of claim 3.

5. A transgenic organism comprising a recombinant polynucleotide of claim 3.

20

6. A method for producing a polypeptide of claim 1, the method comprising:

- a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and
- 25 b) recovering the polypeptide so expressed.

25

30

8. An isolated polynucleotide comprising a sequence selected from the group consisting of:

- a) a polynucleotide sequence of SEQ ID NO:2,
- b) a naturally-occurring polynucleotide sequence having at least 90% sequence identity to the sequence of SEQ ID NO:2,
- c) a polynucleotide sequence complementary to a),
- d) a polynucleotide sequence complementary to b) and
- e) a ribonucleotide equivalent of a)-d).

9. An isolated polynucleotide comprising at least 60 contiguous nucleic acids of claim 8.

10. A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 8, the method comprising:

- a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization complex is formed between said probe and said target polynucleotide or fragments thereof, and
- b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof.

11. A method of claim 10, wherein the probe comprises at least 60 contiguous nucleotides.

12. A method for detecting a target polynucleotide in a sample, said target

polynucleotide having a sequence of a polynucleotide of claim 8, the method comprising:
chain reaction amplification, and

- b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

13. A composition comprising an effective amount of a polypeptide of claim 1 and
5 an acceptable excipient.

14. A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
10 b) detecting agonist activity in the sample.

15. A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
15 b) detecting antagonist activity in the sample.

16. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide sequence of SEQ ID NO:2, the method comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, under conditions suitable for the expression of the target polynucleotide,
20 b) detecting altered expression of the target polynucleotide, and
c) comparing the expression of the target polynucleotide in the presence of varying amounts of the compound and in the absence of the compound.

25

17. A method for assessing toxicity of a test compound, said method comprising:
a) treating a biological sample containing nucleic acids with the test compound;

30

under conditions whereby a specific hybridization complex is formed between

said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 8 or fragment thereof;

c) quantifying the amount of hybridization complex; and

5 d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

10 18. A method for treating a disease or condition associated with decreased expression of functional HGST, comprising administering to a patient in need of such treatment the composition of claim 13.

15 19. A composition comprising an agonist compound identified by a method of claim 14 and a pharmaceutically acceptable excipient.

20 20. A method for treating a disease or condition associated with decreased expression of functional HGST, comprising administering to a patient in need of such treatment a composition of claim 19.

21. A composition comprising an antagonist compound identified by a method of claim 15 and a pharmaceutically acceptable excipient.

25 22. A method for treating a disease or condition associated with overexpression of functional HGST, comprising administering to a patient in need of such treatment a composition of claim 21.

FIG. 8 shows a method for testing a polypeptide of claim 1.

30 a) combining the polypeptide of claim 1 with at least one test compound under

suitable conditions, and

b) detecting binding of the polypeptide of claim 1 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 1.

5 24. A method of screening for a compound that modulates the activity of the polypeptide of claim 1, said method comprising:

a) combining the polypeptide of claim 1 with at least one test compound under conditions permissive for the activity of the polypeptide of claim 1,

10 b) assessing the activity of the polypeptide of claim 1 in the presence of the test compound, and

15 c) comparing the activity of the polypeptide of claim 1 in the presence of the test compound with the activity of the polypeptide of claim 1 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 1 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 1.